Remarks

Claims 1 and 3-7 are pending in this application.

Claims 1 and 7 are rejected under 35 U.S.C §103(a) as being unpatentable over Uyama et al essentially for reasons of record as set forth in paragraph 2 of the previous action with the following additional comments.

"Uyama et al shows the instant thickness of the substrate, with a base member thickness of 12 microns and the additional layers being in the micron range of thickness. In that European -945 is no better than a cumulative reference with respect to Uyama et al, European -945 has been dropped form the rejection."

Claim 1 under 35 U.S.C. § 103(a) over Uyama

The Examiner maintained the § 103(a) rejection of claim 1 of the instant application over Uyama et al. referring to the previous Action dated March 28, 2008 which referred to the previous Action dated Sept. 21, 2007, which referred, in turn, to earlier prosecution.

In the Office Action mailed January 17, 2007, the Examiner's rejection was predicated upon the fact that there would be no difference between Uyama et al. where the interference pattern and the color shift coding were placed on the same side of the substrate and the claimed invention in which the interference pattern and the color shifting coding are separated by the substrate.

Specifically, the Examiner stated in the Office Action mailed January 17, 2007, that:

> *"the placement of the color shifting layer with respect to the interference pattern would have no bearing on the appearance of the color shift property of the security article ... Since the substrate is transparent, it would not affect the color shifting property of the color shifting layer." (underlining added)*

The Applicants then went to the effort and expense of preparing examples which would

demonstrate the difference that resulted from the use of the claimed invention from that provided by Uyama et al.

On or about May 1, 2007, the Applicants filed a response to the Office Action including remarks and an Appendix including samples which compared the coating and hologram on opposites of the substrate as claimed with the coating and hologram located on the same side of the substrate. There were noticeable differences. The sworn declaration of the Declarant showed that there were differences between the claimed invention and the technology described in Uyama et al.

In the Advisory Action dated Sept. 21, 2007, the Examiner acknowledged the differences as described in the declarations. However, the Examiner concluded that the differences *"are simply not distinct enough to warrant patentability."*

In section 2 of the outstanding Office Action the Examiner noted that *"Uyama et al is applied for reasons of record as set forth in paragraph 1 of the previous action,"* therein the Examiner stated that the exhibits *"made by placing the color shifting film and the hologram on opposite sides of the substrate--and that of the prior art--where they are on the same side"* were *" found to be not sufficiently different--certainly not different in kind, but at most, degree--to patentably distinguish over the prior art."* Additionally, in section 5 of the outstanding Office Action, the Examiner wrote that *"there admittedly exists some difference between the exhibits, it is believed that these differences do not rise to the level of any unexpected result as Applicant appears to be suggesting."* To summarize, the Examiner admitted the difference but classified it as difference of degree and not kind and, for this reason, not amounting to unexpected results.

The Applicants respectfully indicate the uncertainty of classifying which difference in properties is "in kind", and which one – only "in degree." Section 716.02 of MPEP advises: *"differences in properties cannot be disregarded on the ground they are differences in degree rather than in kind,"* and refers to *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Inter. 1992) (*"we generally consider a discussion of results in terms of 'differences in degree' as compared to 'differences in kind' . . . to have very little meaning in a relevant legal sense"*).

The invention of placing the hologram and color shifting structures on opposite sides of a

substrate having a thickness in a range of *"3 μm to 100 μm"* produces an unexpected result. The Examiner stated in an earlier Action that there would be no difference from putting them on the same side, and in a further Office Action after seeing the samples that were prepared the Examiner admitted that there was a visual difference. Applicants respectfully submit that the differences in the claimed invention patentably distinguish over Uyama et al.

Although the examiner stated in the January 17, 2007 office action that *"the placement of the color shifting layer with respect to the interference pattern would have no bearing on the appearance of the color shift property of the security article ... Since the substrate is transparent, it would not affect the color shifting property of the color shifting layer"*, there is a notable difference and this claimed structure has particular and unexpected advantages over the cited prior art structure. In fact these differences in kind affect the performance and the durability of the structure itself.

There are significant benefits to having the diffraction and optical interference de-coupled by being on different sides of the substrate.

Let us consider Uyama's device where the color shifting coating is placed directly over the hologram.

If Uyama structure is to be used as a security device, for example on a driver's license, it can be placed with the hologram side up or with the hologram side against the license substrate. In the first instance if the hologram side is up the color shifting coating is subject to deterioration due to handling and is subject to scratching off and marring. Alternatively if the device is applied to the license with the hologram side down on the license the hologram becomes difficult to see because light impinging on the device will be reflected back off the flat upper surface towards the viewer i.e. specular light interfering with the viewing.

In contrast the instant invention provides a device where the effects of color shifting and diffraction each on opposite sides of the substrate are decoupled. If the device is applied to a driver's license or valuable document with the hologram side up and the color shifting side down against the substrate of the license the color shifting coating will be protected and maximal diffraction will occur from the grating which is exposed to the impinging light.

It should also be noted that the color shifting in the applicant's device is more muted and more covert when viewed through the substrate from the diffractive grating side. In many instances this is preferred. In the field of security devices and coatings providing overt features that do not draw attention from the rest of the document is often advantageous and is useful in deterring copying and forgery.

In contrast, putting the ink or paint on opposite sides of the substrate would keep the diffractive effect as well as the color shift effect. Putting the ink on the diffractive surface would result in only one optical effect as seen by the observer. Index matching of the diffractive surface would occur with the polymer in the ink causing the diffractive effect to disappear. Putting the ink and the diffractive surface on opposite sides of the substrate would preserve both the diffractive effect and the color shift effect (from the ink). For this case, the observer would see a combination of diffractive and color shift effects. Therefore, we have different effects for the two cases – one where the diffractive and color shift is on the same side and second where the diffractive and color shift are on different sides.

In the case of an OVD foil, putting the foil on the flat side of the substrate on the side opposite the diffractive surface allows the thin film when used with a magnetic layer for the reflector of the OVD optical stack to be read by a magnetic reader. (Magnetic reflector is disclosed in US 6,761,959, Col 6 line 10-20). If the OVD stack were to be on the same side of the substrate, i.e. on the diffractive surface, then the magnetic layer would vary in height as the stack replicates the diffractive grating. This would cause problems with the read sensor as the distance between the sensor and the magnetic layer would vary. Putting the OVD stack on the flat side of the substrate allows uniform reading of the magnetic signature.

Although not explicitly disclosed, the use of a transparent substrate does not necessarily mean "water white transparency". The substrate could be colored or tinted and still be transparent or transmitting. In such a case, the optical effect would be different for the OVD to be on opposite sides of the substrate to the diffractive side versus the same side. If one viewed the device through the substrate to the diffractive/OVD combination, the colored substrate would effect the colors of the diffraction since white light is not reaching the diffractive surface. On the other

hand if the diffractive surface were at the side closest to viewing with the OVD on the other side (bottom side) the diffractive surface would not be effected since it is on top on the colored substrate.

In light of the aforementioned benefits of having a structure where a diffraction grating and color shifting coating are on opposite sides of the substrate claims 1 and 3-7 are believed to be patentable. The claimed structure provides a notable visual difference in optical effect and provides functional advantages to the structure taught by Uyama et al.

Reconsideration of the claims in this application would be greatly appreciated.

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Respectfully submitted,

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